

IN THE SPECIFICATION

On page 1 and at the top of page 2, please change the title to read:

~~A CIRCUIT BOARD SUPPORT AND HEAT SINK ELECTRONIC~~ ASSEMBLY WITH THERMALLY SEPARATED SUPPORT

Please replace paragraph 0017 with the following:

[0017] In an embodiment, the insulating bushings, or insulating bodies, 16 may be annular, ring-shaped bodies made of a thermally insulating material such as a liquid crystal polymer. One bushing 16 ~~may~~ may fit in each of the holes 22. A top portion 26 of the insulated bushings 16 ~~may~~ may be adjacent to a top surface of the plate 12 and extends outwards from the holes 22. The top portion 26 may be circular with, for example, a diameter 28 of between 3 and 12 mm and a thickness 30 of between 1 and 3 mm.

Please replace paragraph 0021 with the following:

[0021] Although not shown, both the package substrate 56 and the microelectronic die 60 may be square. The package substrate 56 may, for example, have a width 62 of between 10 and 30 mm, a thickness of between 0.5 and 3 mm, and a plurality of alternating conducting and insulating layers therein, as is commonly understood in the art. The microelectronic die 60 may have a width 64 of between 3

and 15 mm and a thickness of between 0.3 and 1 mm and include an integrated circuit, with multiple transistors and capacitors, formed therein as is commonly understood in the art. Although not shown, it should be understood that a plurality of small ~~contacts~~ contact formations, such as solder balls, may interconnect the microelectronic die 60 and the package substrate 56.

Please replace paragraph 0024 with the following:

[0024] Next, as illustrated in Figure 4b, a thermally conductive interface material 72 may be deposited on top of the microelectronic die 60. Then the heat sink assembly 10 may be placed on the circuit board 50. The heat sink assembly 10 may be lowered so that the pins 14 penetrate the masses 70 of solder and extend completely through the pin holes 54, the collars 36 of the pins 14 rest on top of the masses of solder 70, and the plate 12 rests on top of the thermal interface material 72. The entire assembly may then be heated to a temperature, such as 183° C, depending on the materials used, sufficient ~~melt~~ to melt or reflow the BGA contact formations 58 and the masses 70 of solder while a force presses the heat sink assembly 10 toward the circuit board 50 as shown in Figure 4c. Because of the low thermal conductivity of the insulating bushings 16, the plate 12 is thermally separated from the pins 14. Therefore, when the assembly is heated to reflow the contact formations 58 and melt the masses 70 of solder, heat is not conducted from the pins 14 to the plate 12 allowing the masses 70 of solder to reach a temperature sufficient to melt.

Please replace paragraph 0039 with the following:

[0039] The entire assembly may then be heated while a force, as shown in Figure 8c, is applied on the heat sink assembly 100 towards the circuit board 130. The entire circuit board 130 may be heated to a temperature sufficient to melt the solder 142 and reflow the contact formations 138, such as 183° C. Because of the insulating properties of the insulating bodies 106, heat is not conducted from the heat sink leads 104 into the plate 102. Therefore a one-step heating process may be used to both melt the solder 142 and reflow the contact formations 138. Thus, both the heat sink assembly 100 and the semiconductor package 132 may be secured to the circuit board 130 at approximately the same time using the same heating process. As shown in Figure 8c, as the solder melts the heat sink assembly ~~100~~ 100 moves closer to the circuit board 130 so that the circuit board portions 122 of the heat sink leads 104 may substantially contact the solder pads 134 on the circuit board 130. After the heating process has taken place, the thermal interface material 144 may interconnect the microelectronic die 140 and the plate 102. An airspace 146 may remain between the plate 102 and the circuit board 130. The airspace 146 may have a height 148 of approximately 2.5 cm.

IN THE DRAWNGS

Applicant has submitted a new sheet of drawings, which includes Figure 2 and a revised Figure 3.

As described on Page 6 of the specification, reference number 32 has been added to Figure 3.